APPENDIX A. DETAILED INFORMATION ON TYPES OF MANPOWER AND WEAPON SYSTEM LOSSES FOR BATTLE OF KURSK

A. TYPE OF MANPOWER CASUALTIES

Figure 88 shows the fraction of each type of casualty relative to total casualties. When all of four casualty types are considered, WIA accounted for the largest amount of casualties for both sides, and the German WIA fraction (0.751) was significantly higher than the Soviet WIA fraction (0.543). The next largest Soviet casualty fraction was for CMIA (0.230) while CMIA fraction accounted for the third largest German casualty fraction (0.031). The Soviet CMIA fraction was over 7 times greater than the German fraction. KIA accounted for the second largest German casualty fraction (0.15) while KIA fraction accounted for the third largest Soviet casualty fraction (0.217). Fewer than 1 percent of total casualties were DNBI for the Soviet (0.008), while DNBI accounted for almost 7 percent of total German casualties (0.65), which is over 7 times greater than the Soviet fraction.

Figure 89 shows the fraction of each type of casualty relative to initial OH Personnel. When all four casualty types are considered, WIA accounted for the largest amount of casualties for both sides again, and the Soviet WIA fraction (0.126) was slightly higher than the German WIA fraction (0.089). The next largest Soviet casualty fraction was for CMIA (0.053), while CMIA fraction accounted for the smallest German casualty fraction (0.003). The Soviet CMIA fraction was over 14 times greater than the German fraction (14.401). KIA accounted for the second largest German casualty fraction (0.018) while KIA fraction accounted for the third largest Soviet casualty fraction (0.050). While less than 1 percent of total casualties were DNBI for the both

sides, German DNBI fraction (0.007) was almost four (3.84) times higher than the Soviet DNBI fraction (0.002).

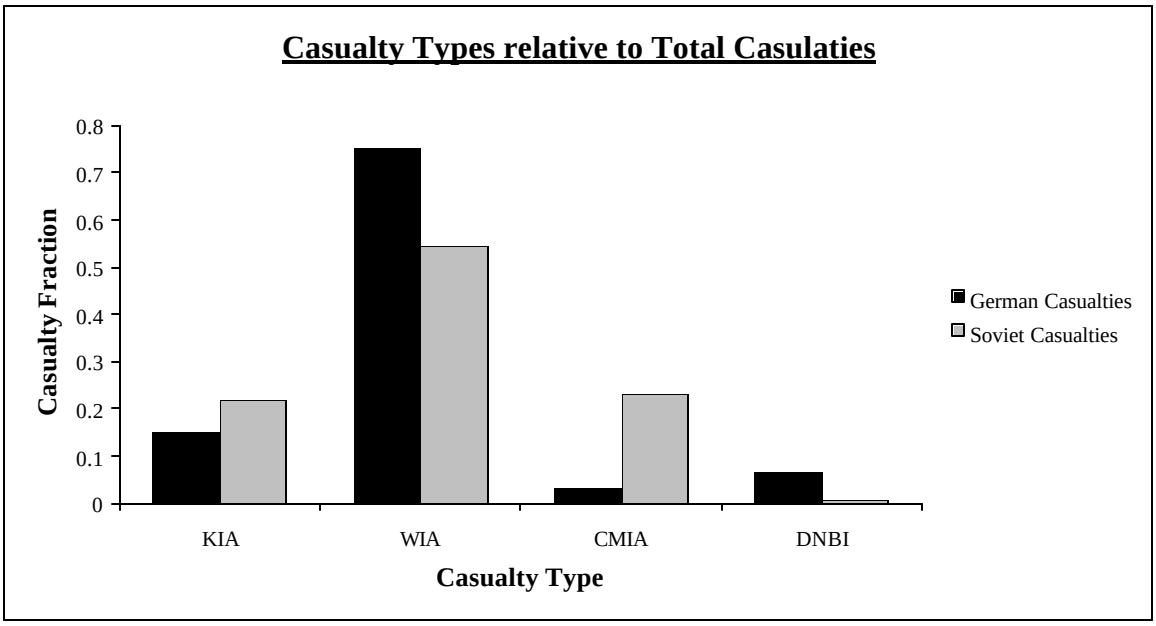

Figure 88. Fraction of personnel casualty types relative to total personnel casualties. WIA accounted for the largest amount of casualties for both sides.

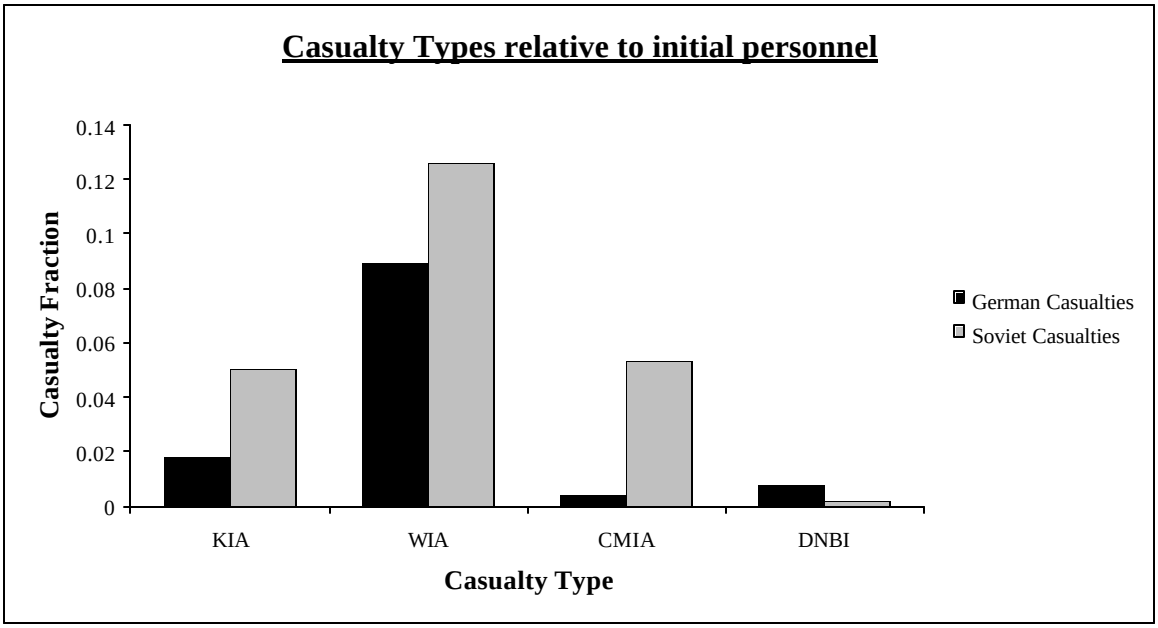

Figure 89. Fraction of personnel casualty types relative to total initial OH personnel. WIA accounted for the largest amount of casualties for both sides.

Figures 90 through 97 show daily and cumulative casualties for each casualty type of KIA, WIA, CMIA and DNBI consecutively. The largest differences are in KIA and CMIA. The Soviets had almost 5 (4.621) KIA for every one German KIA. The gap is even bigger for CMIA, with almost 24 (23.905) CMIA for every German CMIA. KIA and CMIA together, accounted for almost 45 (0.448) percent of total Soviet casualties, while they accounted for only slightly over 18(0.183) percent of total German casualties. For both sides, the majority of casualties were WIA. The Soviets had more than twice (2.343) as many WIA as the Germans.

The peak daily combat casualty rates occurred on July 5 and 12. The German peak daily rate was on July 5. The first day of the German attack was July 5, when only a minority of the Soviet force was engaged, and several Soviet units were overrun.

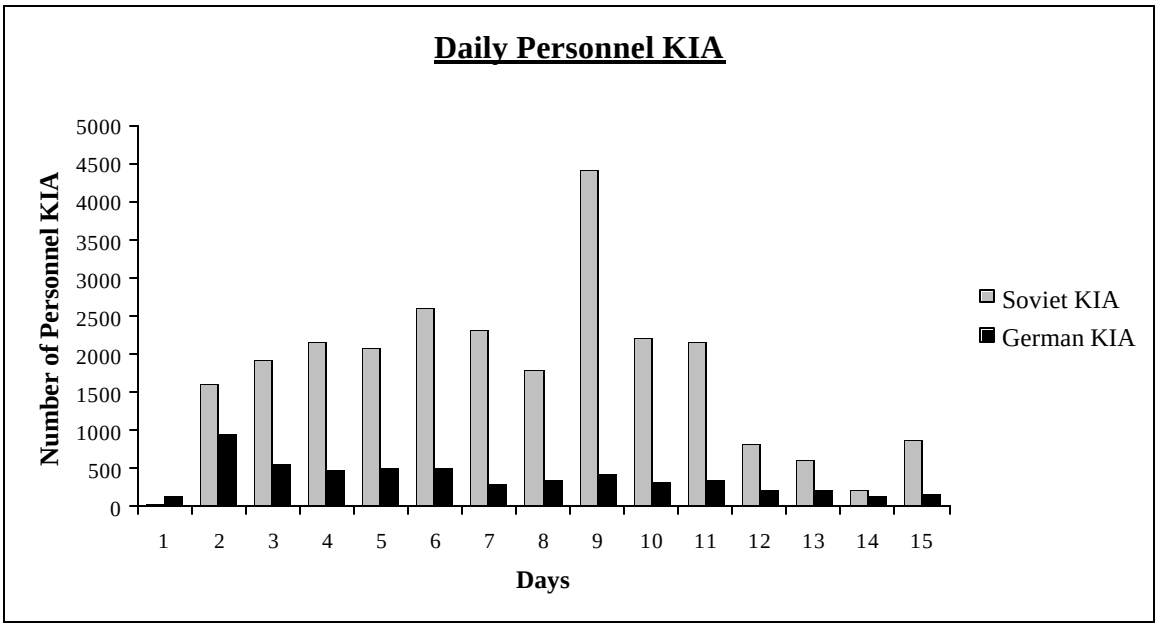

Figure 90. Daily number of total personnel casualties that are KIA. KIA denotes personnel that are killed in action.

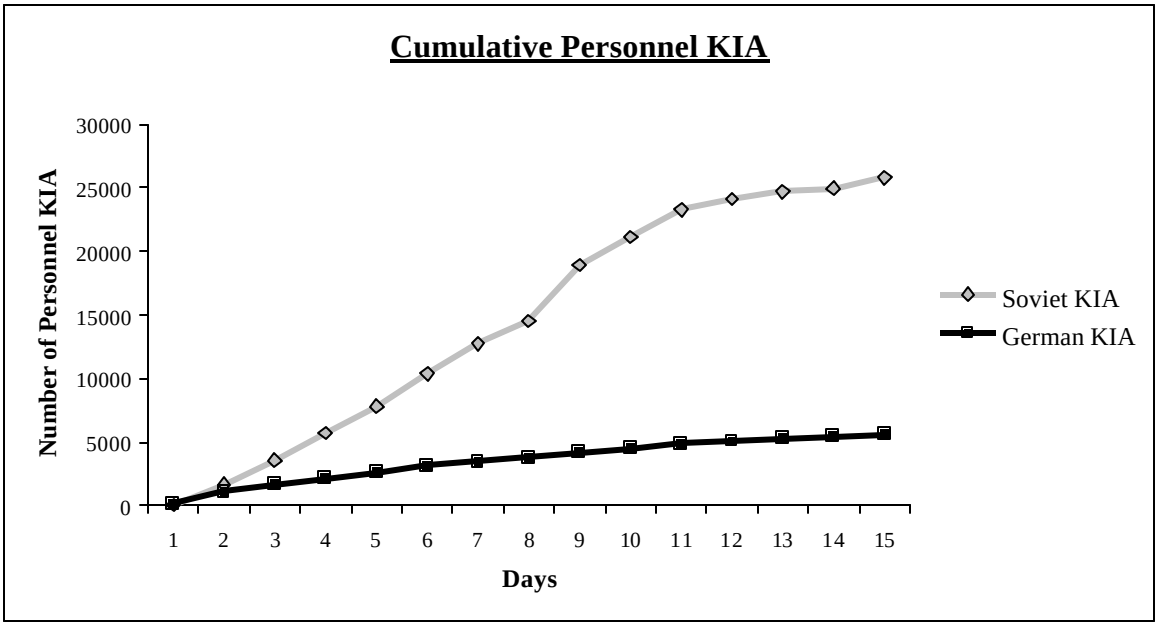

Figure 91. Daily cumulative number of total personnel casualties that are KIA. KIA denotes personnel killed in action.

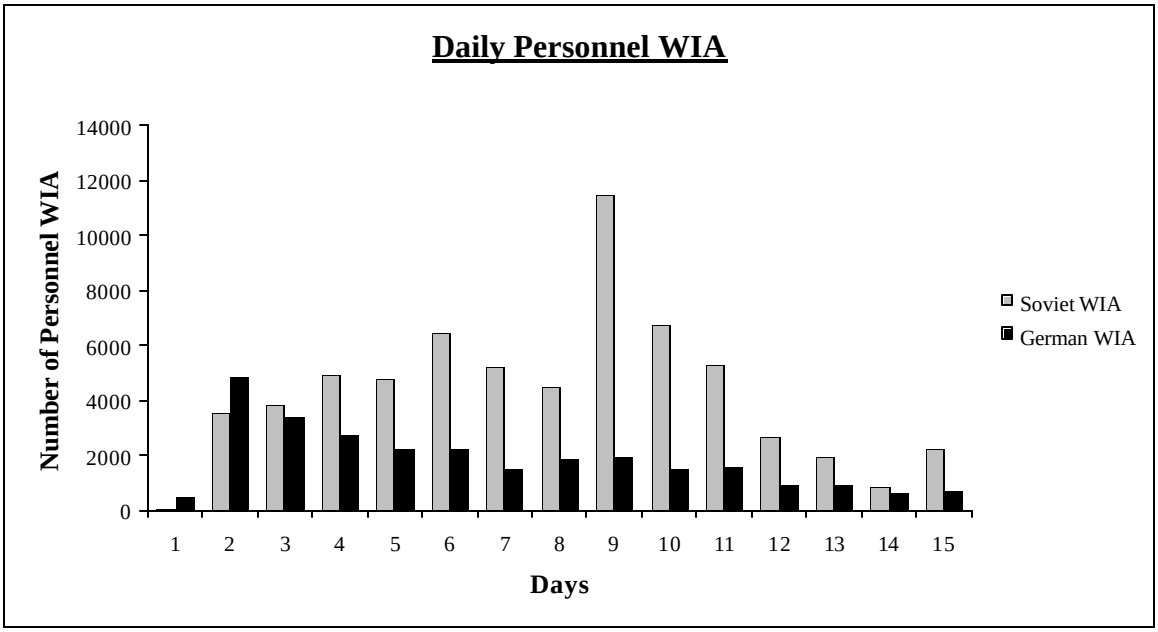

Figure 92. Daily number of total personnel casualties that are WIA. WIA denotes personnel wounded in action.

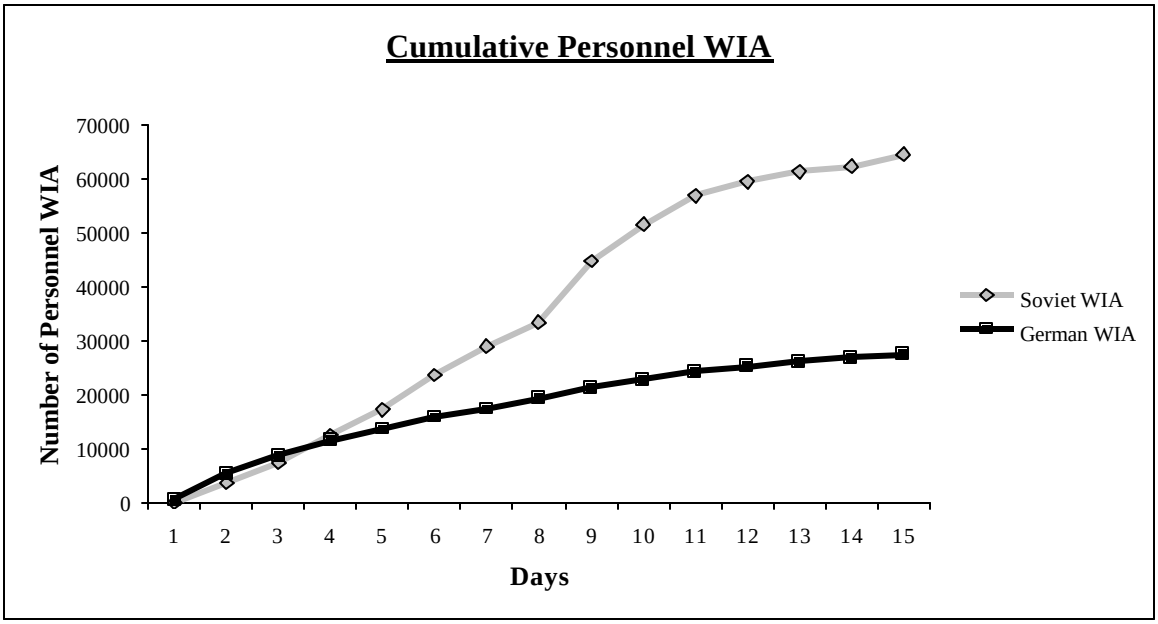

Figure 93. Daily cumulative number of total personnel casualties that are WIA. WIA denotes personnel wounded in action.

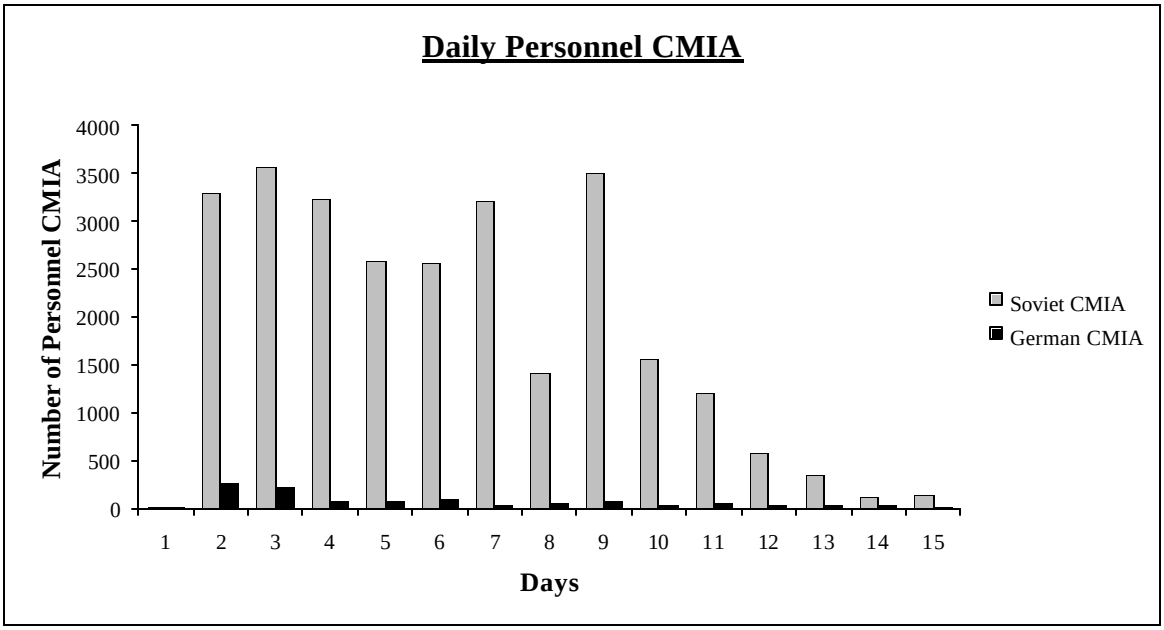

Figure 94. Daily number of total personnel casualties that are CMIA. CMIA denotes personnel captured or missing in action.

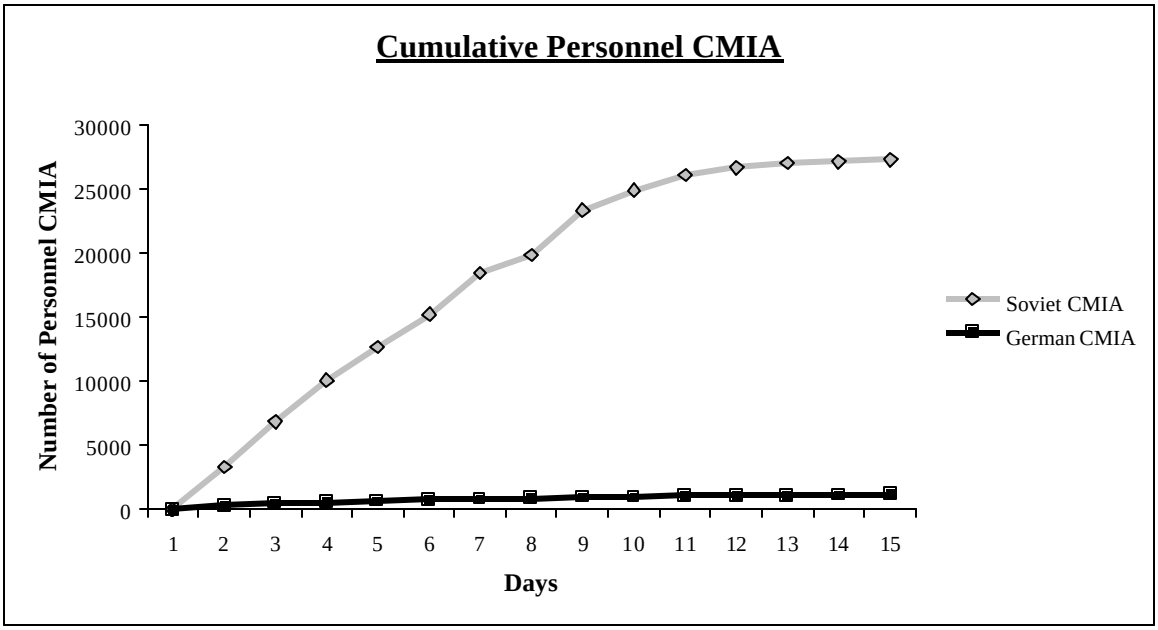

Figure 95. Daily cumulative number of total personnel casualties that are CMIA. CMIA denotes personnel captured or missing in action.

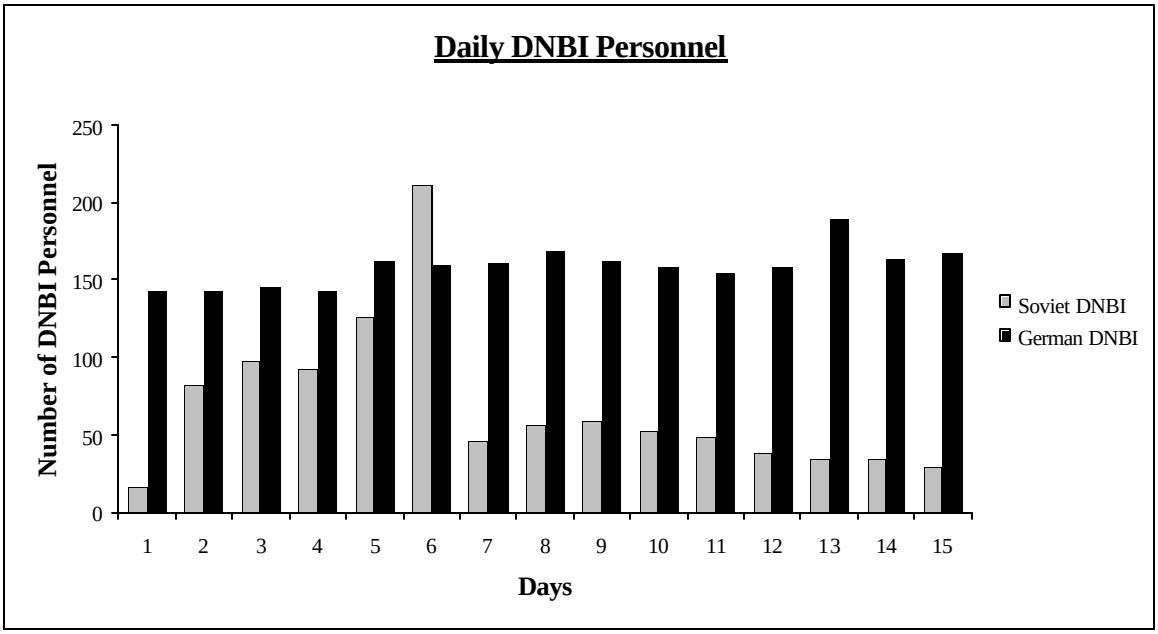

Figure 96. Daily number of total personnel casualties that are DNBI. DNBI denotes casualties due to disease and nonbattle injuries.

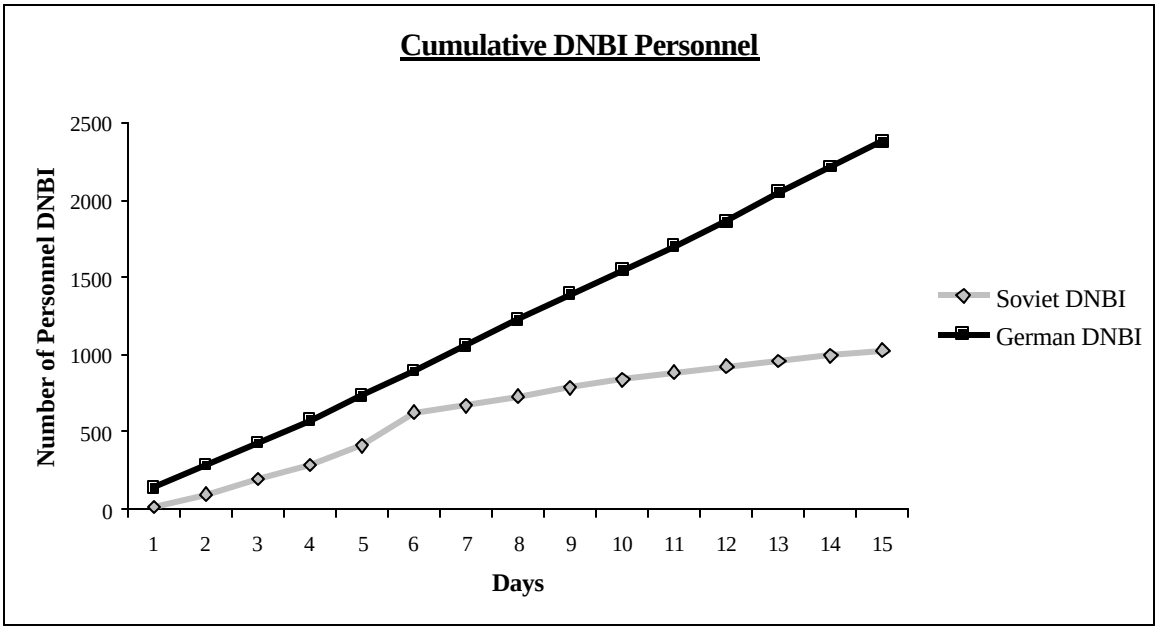

Figure 97. Daily cumulative number of total personnel casualties which are DNBI. DNBI denotes casualties due to disease and nonbattle injuries.

B. TYPE OF TANK LOSSES

Figure 98 shows the fraction of each type of tank loss relative to total tank losses. When both types of losses are considered, DAMAGED accounted for the largest amount of tank losses (0.849) for the German side, while DST+ABND accounted for the largest amount of tank losses (0.543) for the Soviet side. Consequently, DST+ABND accounted for the 15 (0.150) percent of tank losses for the Germans and DAMAGED accounted for the 54 (0.543) percent of tank losses for the Soviets. Overall, for every 1 DAMAGED Soviet tank, 1 (1.008) German tank was DAMAGED, and for every 1 DST+ABND German tank, almost 7 (6.655) Soviet tanks were DST+ABND.

Figure 99 shows the fraction of each type of tank loss relative to initial amount of OH tank. When both types of losses are considered, again DAMAGED accounted for the largest amount of tank losses for the German side, while DST+ABND accounted for the

largest amount of tank losses for the Soviet side. 89 (0.888) percent of the initial amount of OH German tank was DAMAGED, while only one sixth of that amount, i.e. 16 (0.157) percent, was DST+ABND. Fifty (0.495) percent of the initial amount of OH Soviet tanks was DST+ABND, while 42 (0.415) percent, was DST+ABND.

Figures 100 through 103 show daily and cumulative tank losses for each type of tank losses, namely DST+ABND and DAMAGED consecutively.

C. TYPE OF APC LOSSES

Figure 104 shows the fraction of each type of APC loss relative to total APC losses. When both types of losses are considered, DAMAGED accounted for the largest amount of APC losses (0.739) for the Germans, while DST+ABND accounted for the

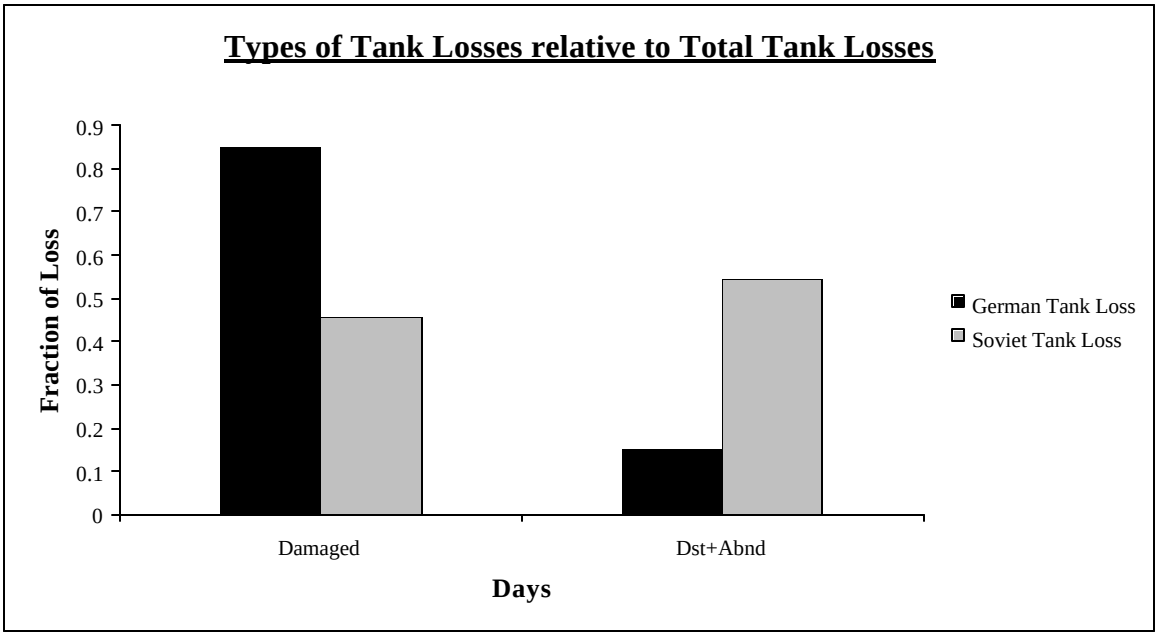

Figure 98. Fraction of each type of tank loss relative to total tank losses. When both types of losses are considered, DAMAGED accounted for the largest amount of tank losses for the German side, while DST+ABND accounted for the largest amount of tank losses for the Soviet side

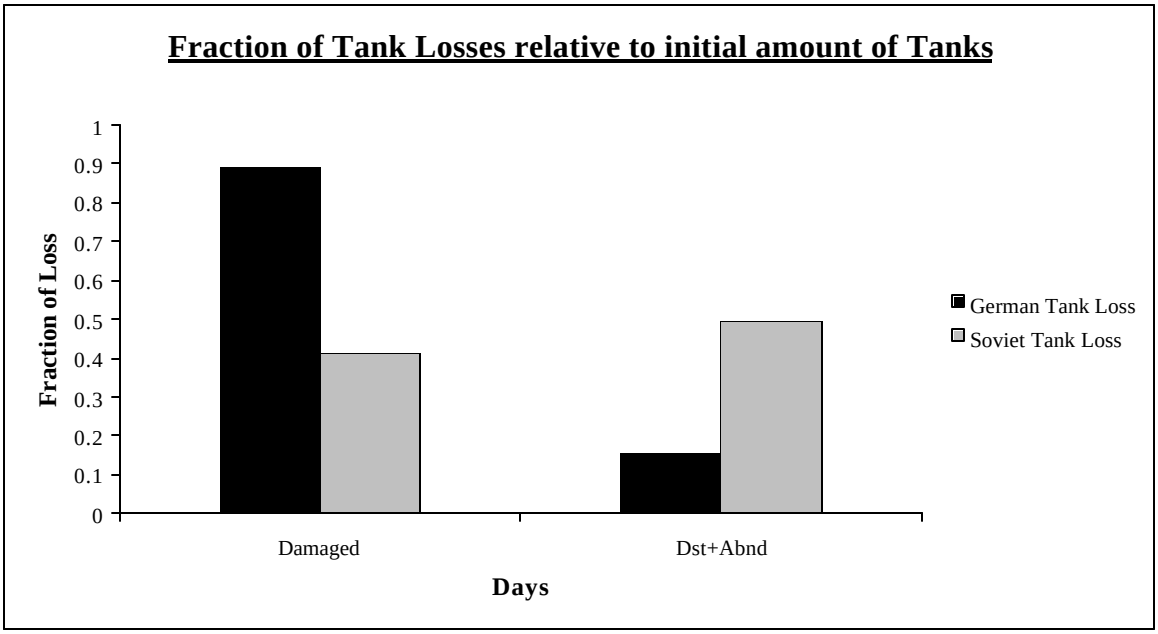

Figure 99. Fraction of each type of tank loss relative to initial number of OH tanks. When both types of losses are considered, DAMAGED accounted for the largest amount of tank losses for the German side, while DST+ABND accounted for the largest amount of tank losses for the Soviet side.

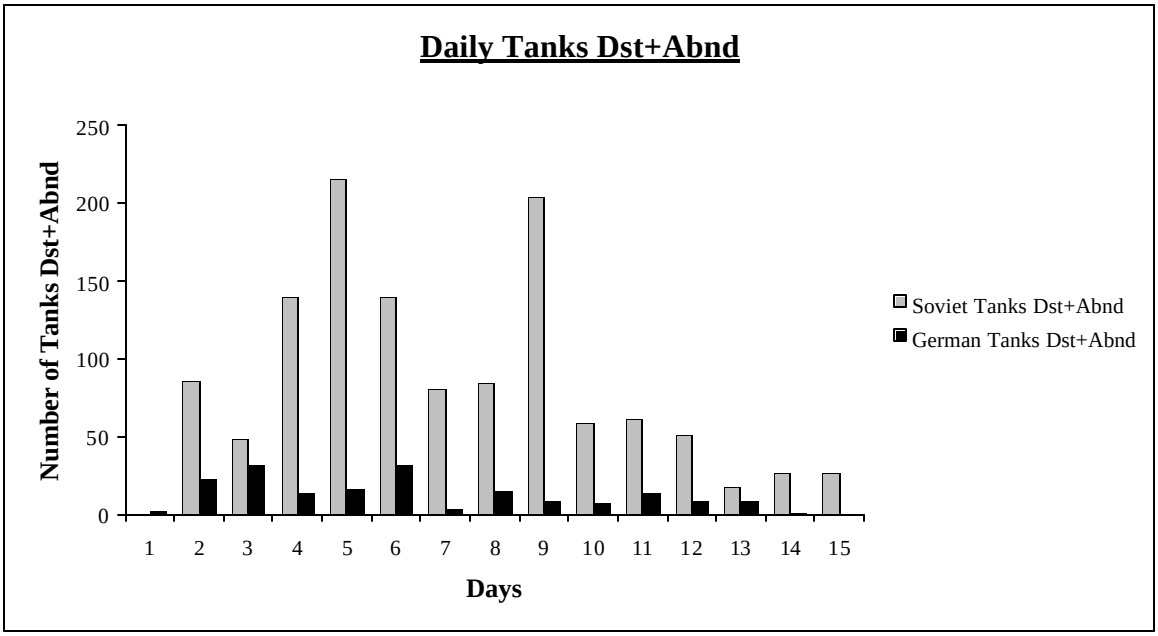

Figure 100. Daily number of total tank losses that are DST+ABND. DST+ABND denotes the weapons that are destroyed or abandoned. Soviets had no tanks that are DST+ABND on day 1, Germans had no tanks which are DST+ABND on day 15.

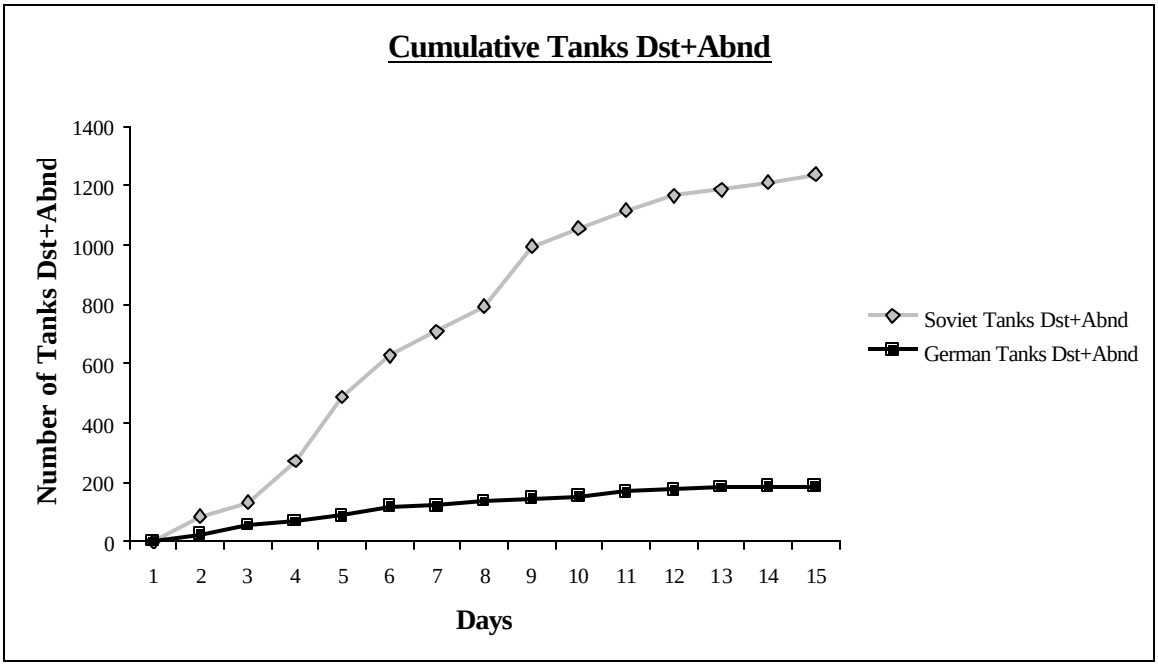

Figure 101. Cumulative number of tank losses that are DST+ABND. DST+ABND denotes the weapons that are destroyed and abandoned.

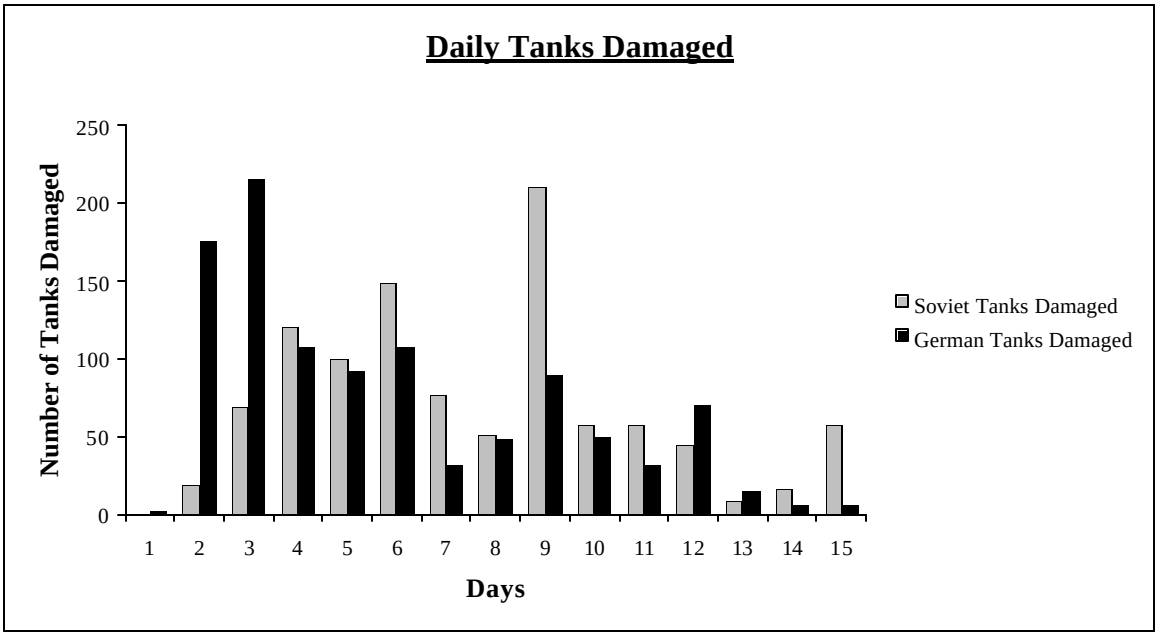

Figure 102. Daily number of total tank losses that are damaged. Soviets had no damaged tanks on day 1.

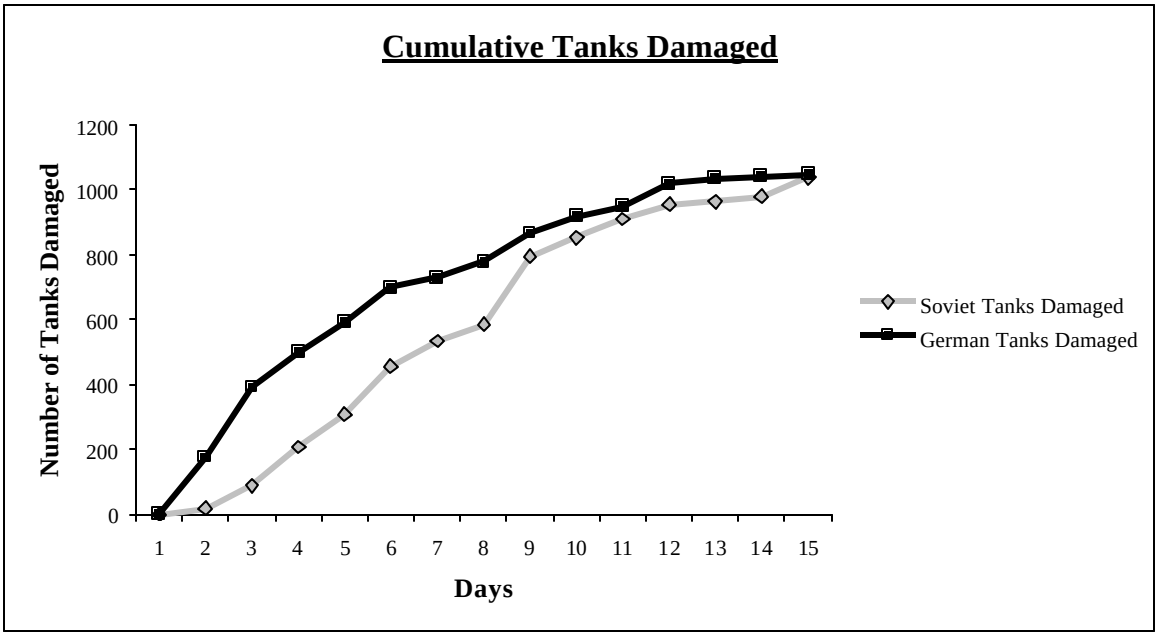

Figure 103. Daily cumulative number of total tank losses that are damaged.

largest amount of APC losses (0.623) for the Soviet side. Consequently, DST+ABND accounted for the 26 (0.260) percent of APC losses for the Germans and DAMAGED accounted for the 38 (0.376) percent of APC losses for the Soviets. Overall, for every 1 DAMAGED Soviet APC, more than 3 (3.227) German APCs were DAMAGED, and for every 1 DST+ABND German APC, 1.46 Soviet APCs were DST+ABND.

Figure 105 shows the fraction of each type of APC loss relative to initial amount of OH APC. When both types of losses are considered, again DAMAGED accounted for the largest amount of APC losses for the German side, while DST+ABND accounted for the largest amount of APC losses for the Soviet side. Twelve (0.121) percent of the initial amount of OH German APC were DAMAGED, while only one third of that amount, i.e. 4 (0.042) percent, were DST+ABND. Fourteen (0.142) percent of the initial

amount of OH Soviet APC were DST+ABND, while 9 (0.086) percent, were DST+ABND.

Figures 106 through 109 show daily and cumulative APC losses for each type of APC losses, namely DST+ABND and DAMAGED consecutively.

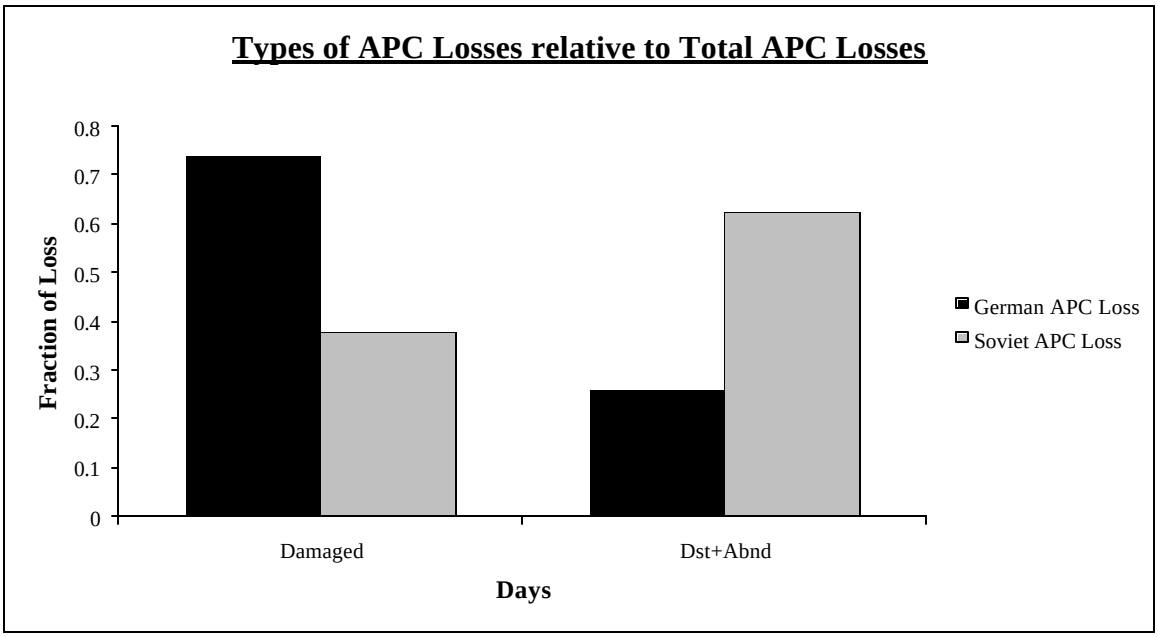

Figure 104. Fraction of each type of APC loss relative to the total APC losses. DAMAGED accounted for the largest amount of APC losses for the German side, while DST+ABND accounted for the largest amount of APC losses for the Soviet side.

D. TYPE OF ARTILLERY LOSSES

Figure 110 shows the fraction of each type of Artillery loss relative to total artillery losses. When both types of losses are considered, DST+ABND accounted for the largest amount of artillery losses for both sides, and the Soviet DST+ABND fraction (0.847) was significantly higher than the German fraction (0.559). Consequently, DAMAGED accounted for the 44 (0.440) percent of artillery losses for the Germans and 15 (0.152) percent of artillery losses for the Soviets. Overall, for every 1 DAMAGED Soviet Artillery, nearly 3 (2.545) German artillery was DAMAGED, and for

every 1 DST+ABND German artillery, almost 2 (1.718) Soviet artillery was DST+ABND.

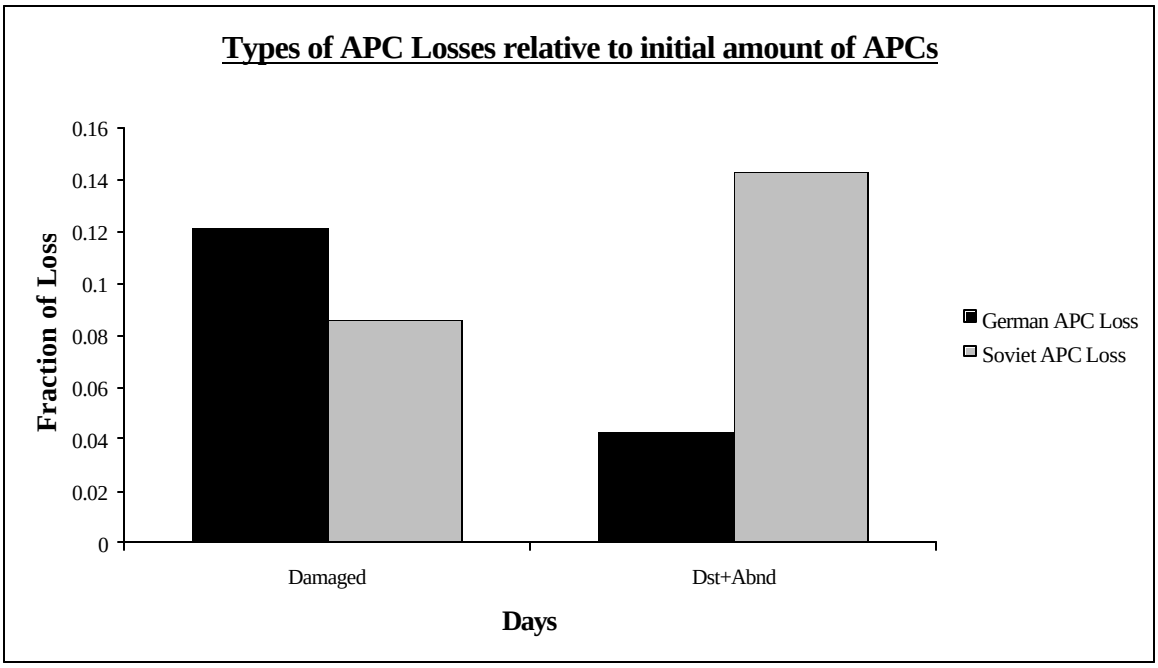

Figure 105. Fraction of each type of APC loss relative to the initial amount of APCs.

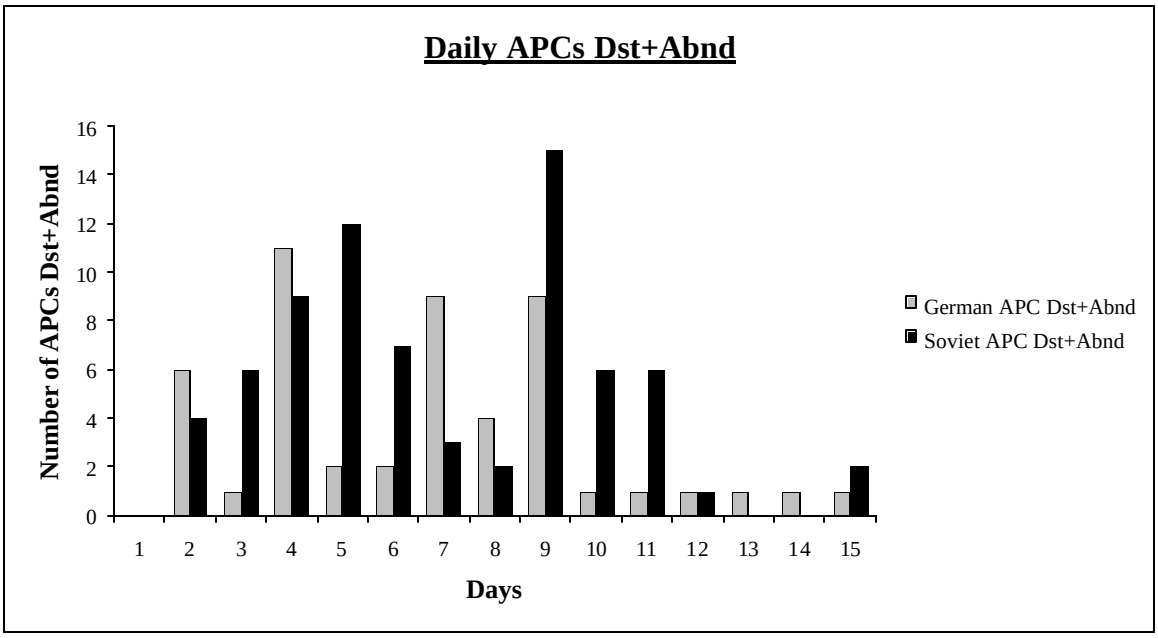

Figure 106. Daily number of total APC losses that are DST+ABND. DST+ABND denotes weapons that are destroyed or abandoned. Soviets had no APCs that are DST+ABND on days 1,13,14. Germans had no APCs that are DST+ABND on day 1.

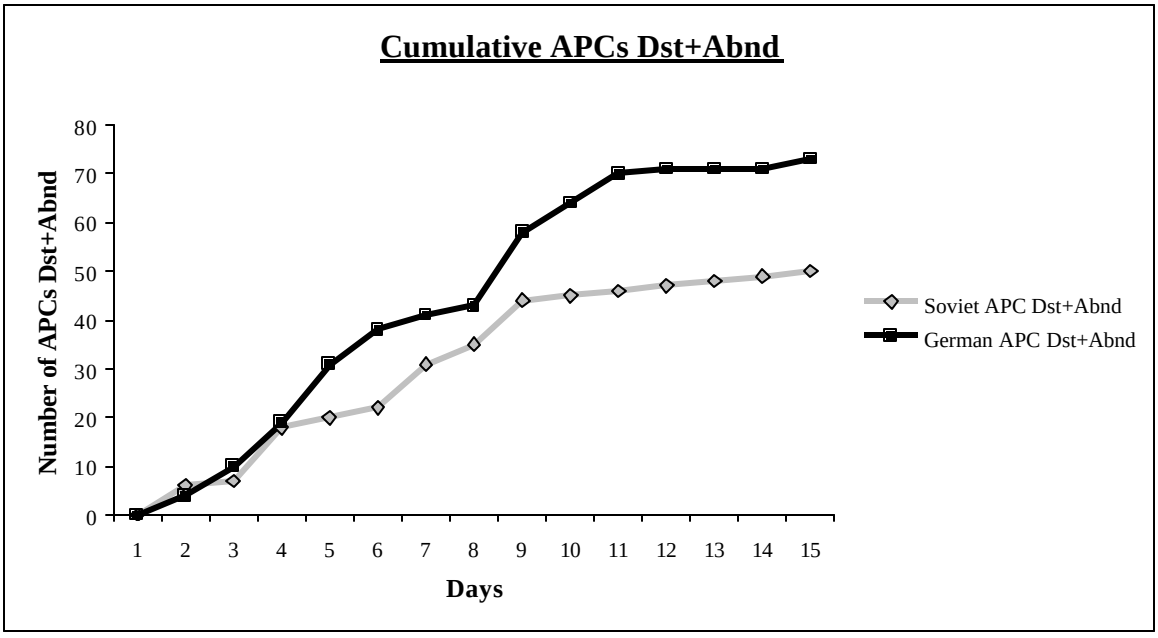

Figure 107. Daily Cumulative number of total APC losses that are DST+ABND. DST+ABND denotes weapons that are destroyed or abandoned.

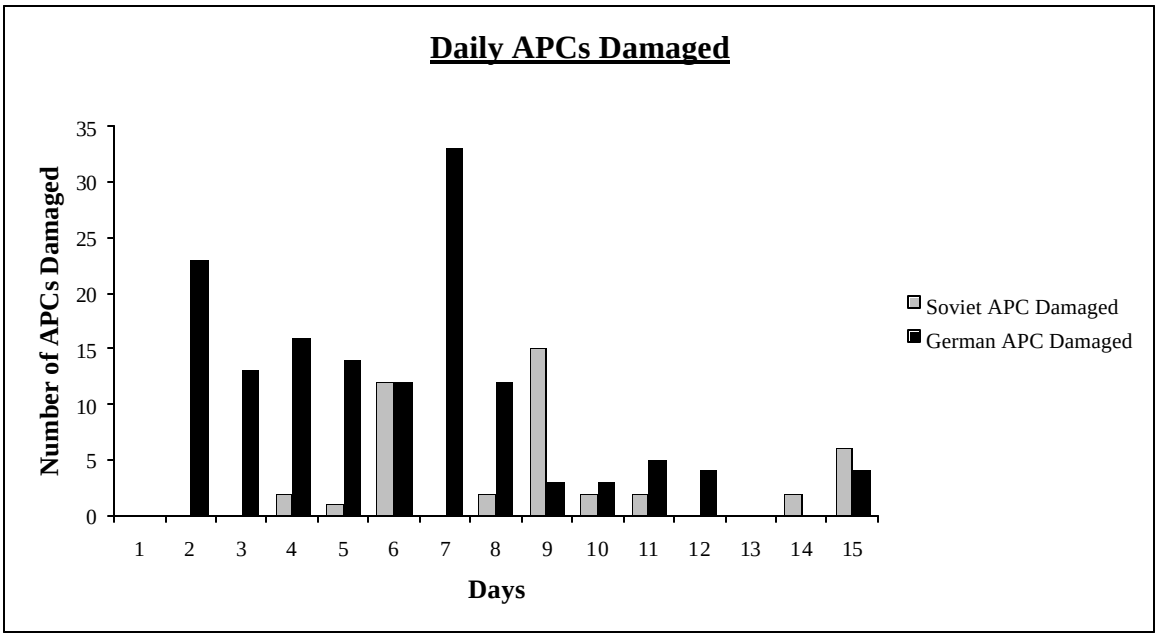

Figure 108. Daily number of Total APC losses that are damaged. Soviets had no damaged APCs on days 1, 2, 3, 7, 12 and 13. Germans had no damaged APCs on days 1, 13 and 14.

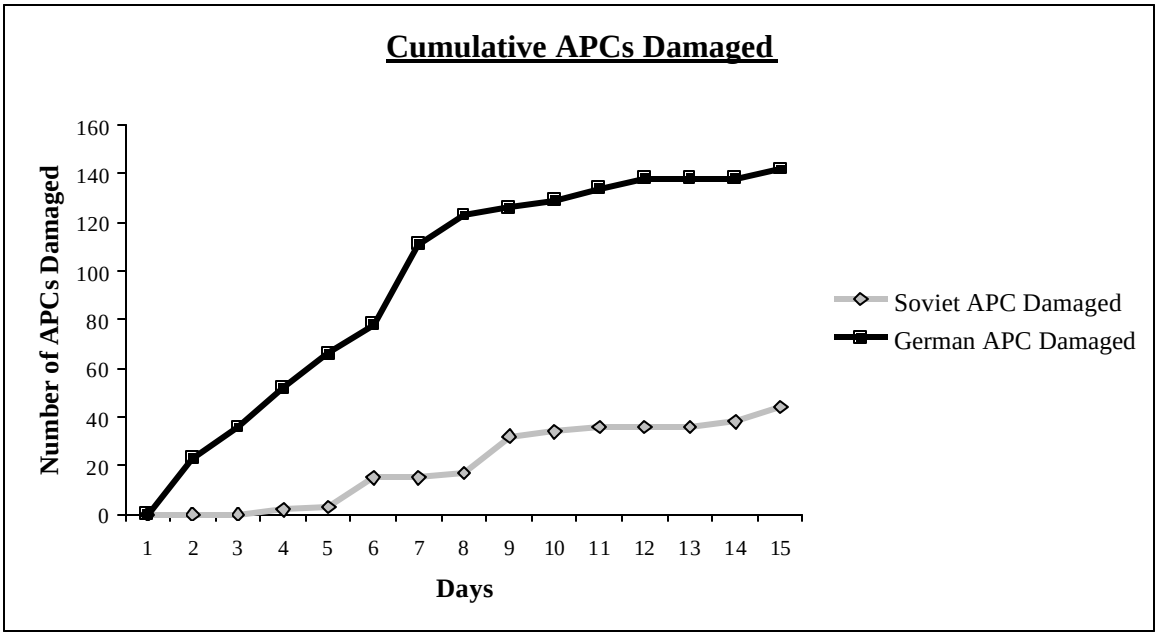

Figure 109. Daily cumulative number of total APC losses that are damaged.

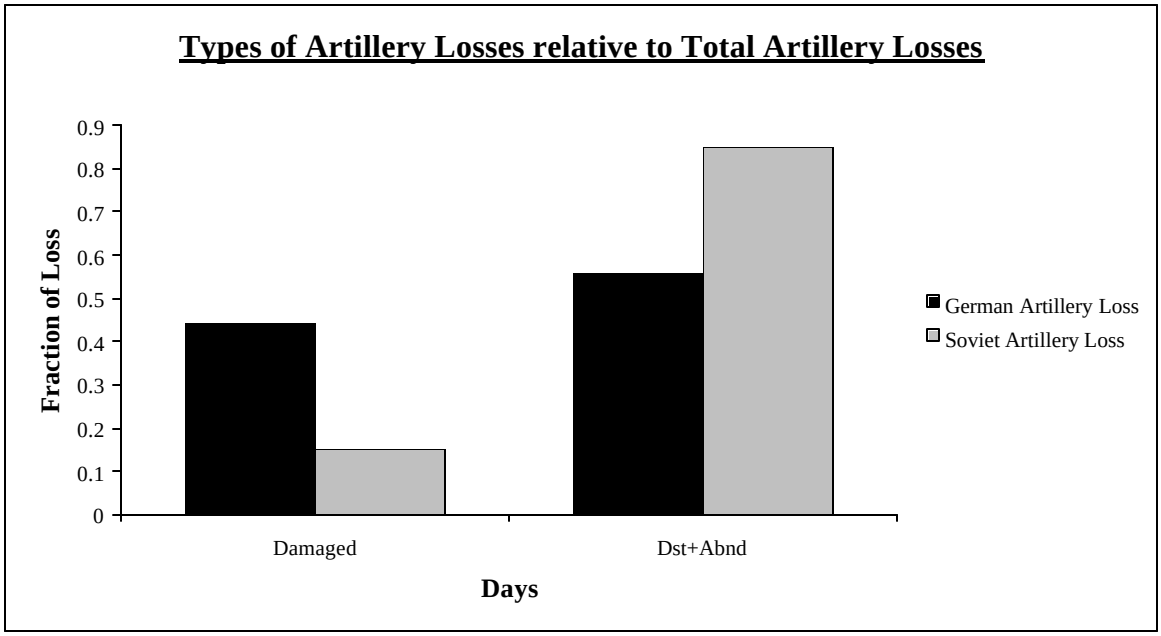

Figure 110. Fraction of each type of artillery losses relative to total artillery losses. DST+ABND accounted for the largest amount of artillery losses for both sides.

Figure 111 shows the fraction of each type of artillery loss relative to initial amount of OH artillery. When both types of losses are considered, again DST+ABND accounted for the largest amount of artillery losses both for the German side and also for the Soviet side. 6 (0.059) percent of the initial amount of OH German artillery was DST+ABND, while 5 (0.047) percent was DAMAGED. 17(0.169) percent of the initial amount of OH Soviet artillery was DST+ABND, while only almost one sixth of that amount, i.e. 3 (0.030) percent, was DAMAGED.

Figures 112 through 115 show daily and cumulative Artillery losses for each type of artillery losses namely DST+ABND and DAMAGED consecutively.

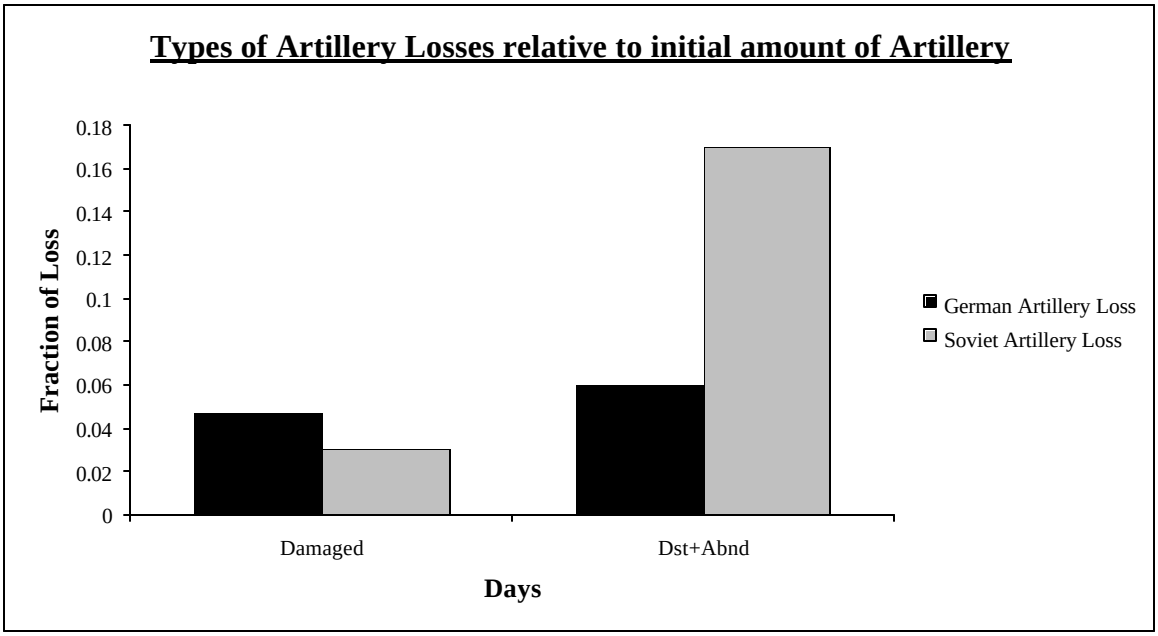

Figure 111. Fraction of each type of loss relative to initial amount of artillery. DST+ABND accounted for the largest amount of artillery losses for both the German side and the Soviet side.

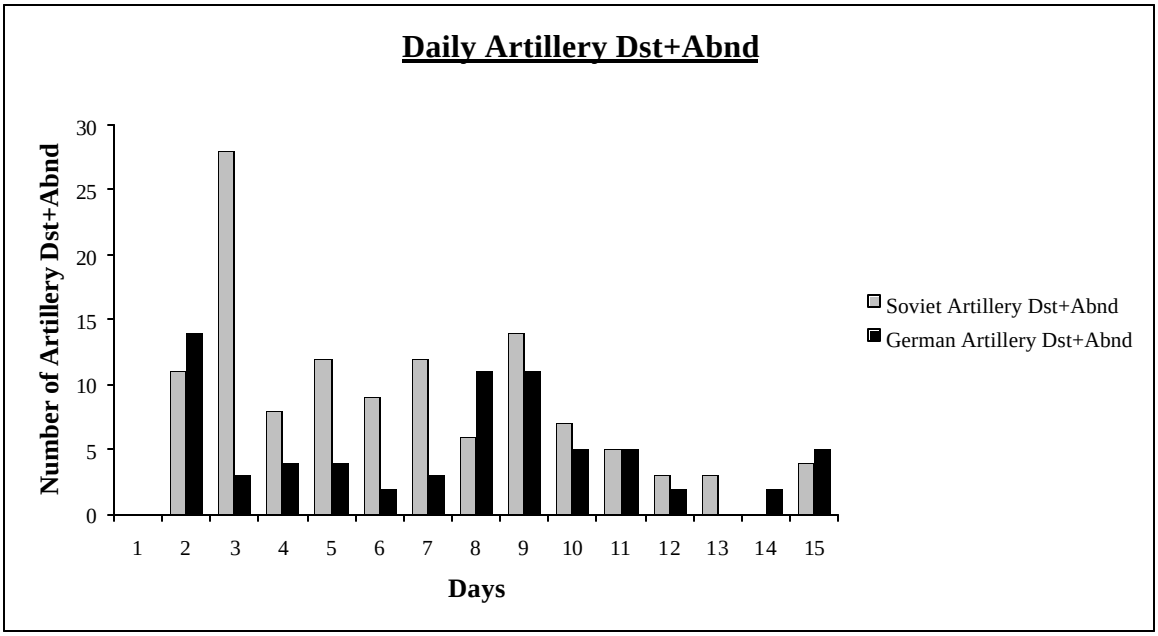

Figure 112. Daily number of total artillery losses which are DST+ABND. DST+ABND denotes weapon systems that are destroyed or abandoned.

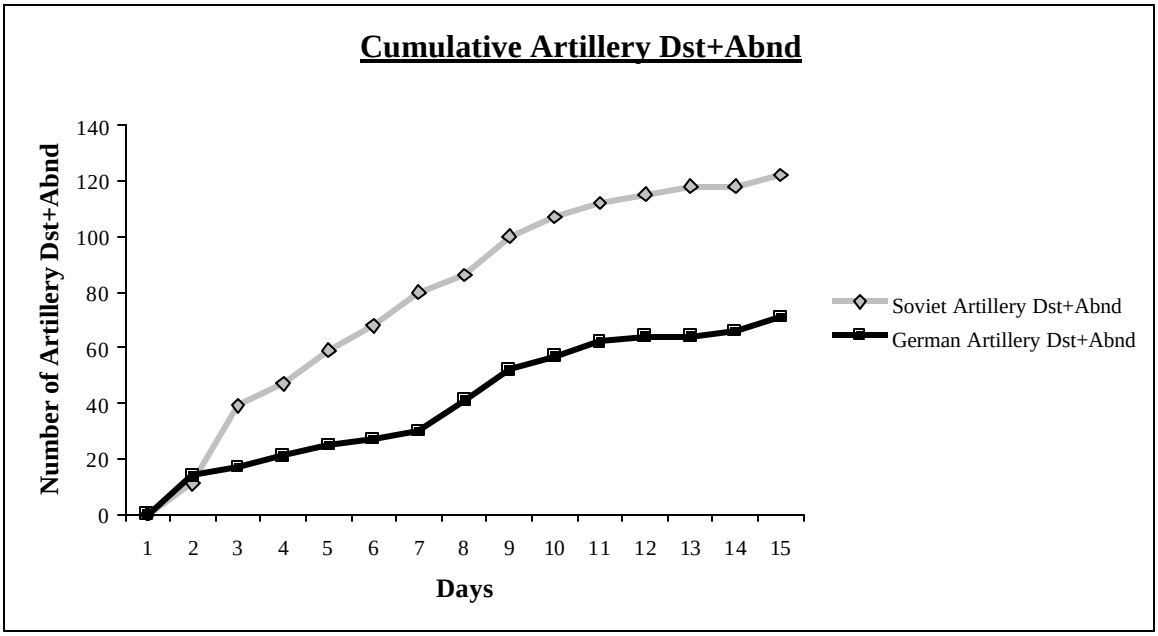

Figure 113. Daily cumulative number of total artillery losses that are DST+ABND. DST+ABND denotes weapon systems that are destroyed or abandoned.

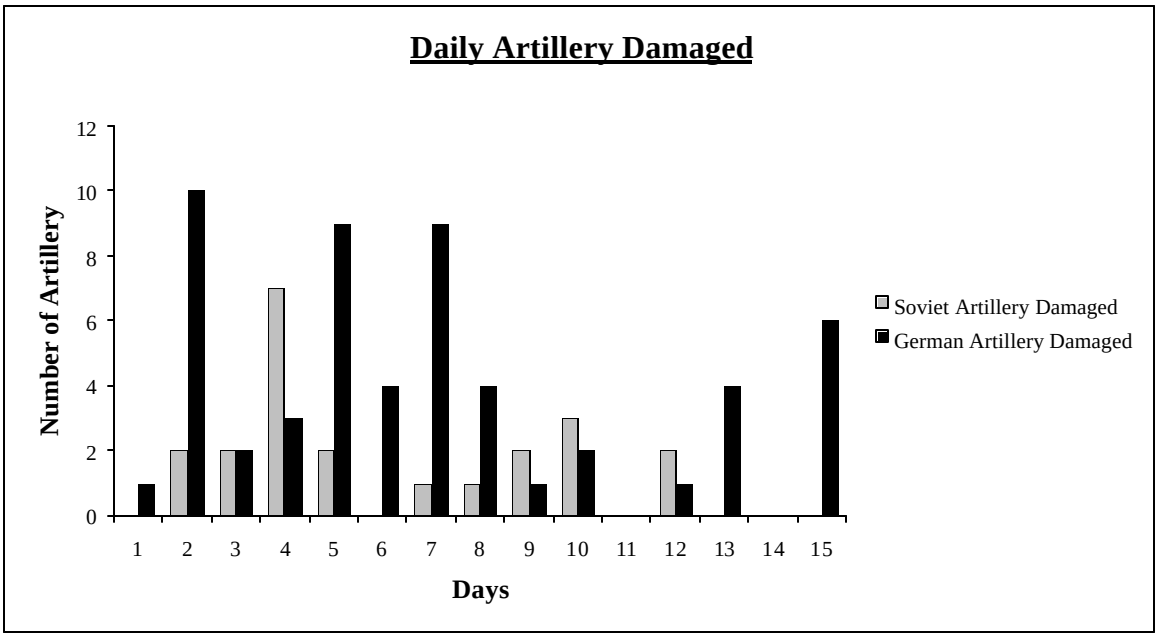

Figure 114. Daily number of total artillery losses that are damaged. Soviets had no damaged artillery on days 1, 6, 11, 13, 14 and 15. Germans had no damaged artillery on days 11 and 14.

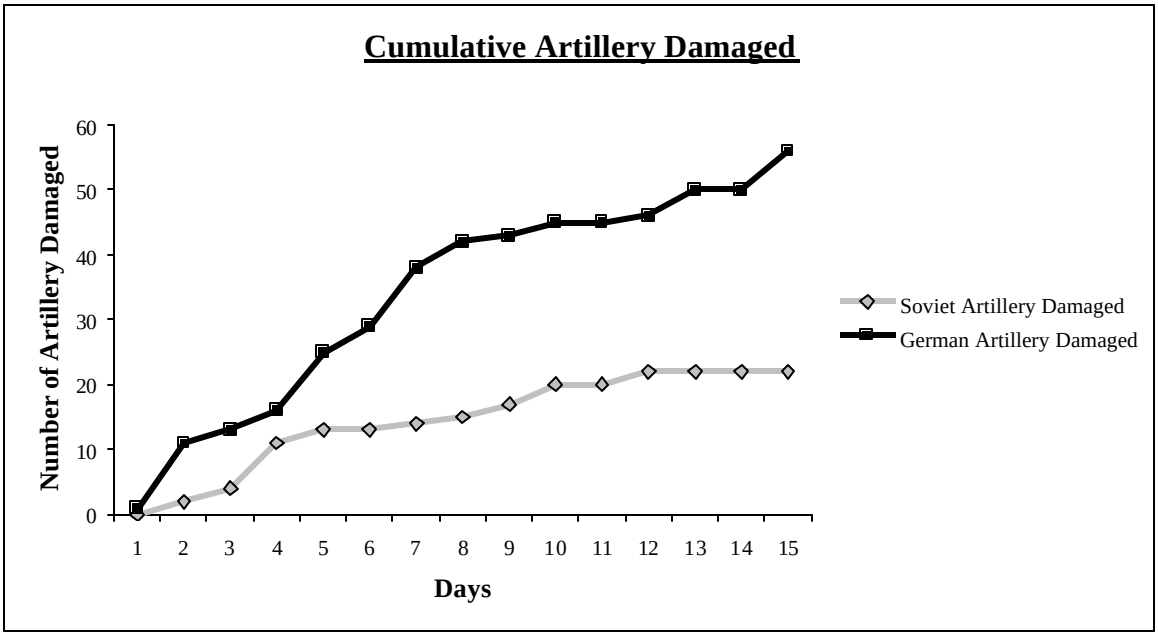

Figure 115. Daily cumulative number of total artillery losses that are damaged.